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DERWENT-ACC-NO: 2000-055363
DERWENT-WEEK: 200050

TITLE: Enrichment of polyunsaturated fatty acid mixture, useful for production of compositions enriched in specific isomers

INVENTOR: CAIN, F W; TARAN, V ; VAN HOEK, G L M ; VAN DER HOEK, M H W

PATENT-ASSIGNEE:

ASSIGNEE	CODE
LODERS-CROKLAAN BV	UNIL

PRIORITY-DATA: 1998EP-0201580 (May 12, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6127562 A	October 3, 2000	N/A	000	C11B007/00
EP 964058 A1	December 15, 1999	E	008	C12P007/64
JP 2000023689 A	January 25, 2000	N/A	004	C12P007/64

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6127562A	May 12, 1999	1999US-0310339	N/A
EP 964058A1	April 27, 1999	1999EP-0201289	N/A
JP2000023689A	May 10, 1999	1999JP-0128955	N/A

INT-CL (IPC): C11B 7/00; C12N 9/20; C12P 7/64; C12N 9/20; C12R 1/05

ABSTRACTED-PUB-NO: EP 964058A
BASIC-ABSTRACT:

NOVELTY - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new.

DETAILED DESCRIPTION - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new. The PUFA mix (II) is a CLA mixture comprising CLA isomers, at least one having a trans-10 double bond and (II) comprises at least 5% weight of the trans-10 isomer. (I) comprises:

(1) subjecting (II) to an enzymatic conversion with a mono-, di- or higher alcohol, using an enzyme (III) that discriminates trans-10 isomers from other cis and/or trans acting isomers also present in the CLA mixture of (II);

(2) separating the mixture obtained, after the conversion, into unconverted PUFA

acids CLA and esters or glycerides, especially CLA, by physical or chemical means; and

(3) isolating an ester or glyceride mix from CLA's that is enriched in trans-10 CLA isomers with at least 30% compared to the starting mixture.

USE - (I) is used for the enrichment of a polyunsaturated fatty acid (PUFA) mixture (claimed). The method allows the manufacture of compositions enriched in specific desired isomers, including trans-10 isomers. (I) is especially useful when using short alkyl alcohols (C1 - C6), especially ethanol and glycerol, that are food-grade.

ADVANTAGE - Prior art methods for the enrichment of a compound, based on alcoholysis, are not very suitable for obtaining an ester product that is enriched in trans-10 isomers, as the process has to be repeated several times, making it complicated, time-consuming and leads to lower enrichment along the free fatty acid route. (I) provides an enriched ester product in one esterification step and therefore results in higher enrichment.
ABSTRACTED-PUB-NO:

US 6127562A
EQUIVALENT-ABSTRACTS:

NOVELTY - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new.

DETAILED DESCRIPTION - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new. The PUFA mix (II) is a CLA mixture comprising CLA isomers, at least one having a trans-10 double bond and (II) comprises at least 5% weight of the trans-10 isomer. (I) comprises:

(1) subjecting (II) to an enzymatic conversion with a mono-, di- or higher alcohol, using an enzyme (III) that discriminates trans-10 isomers from other cis and/or trans acting isomers also present in the CLA mixture of (II);

(2) separating the mixture obtained, after the conversion, into unconverted PUFA acids CLA and esters or glycerides, especially CLA, by physical or chemical means; and

(3) isolating an ester or glyceride mix from CLA's that is enriched in trans-10 CLA isomers with at least 30% compared to the starting mixture.

USE - (I) is used for the enrichment of a polyunsaturated fatty acid (PUFA) mixture (claimed). The method allows the manufacture of compositions enriched in specific desired isomers, including trans-10 isomers. (I) is especially useful when using short alkyl alcohols (C1 - C6), especially ethanol and glycerol, that are food-grade.

ADVANTAGE - Prior art methods for the enrichment of a compound, based on alcoholysis, are not very suitable for obtaining an ester product that is enriched in trans-10 isomers, as the process has to be repeated several

times, making it complicated, time-consuming and leads to lower enrichment along the free fatty acid route. (I) provides an enriched ester product in one esterification step and therefore results in higher enrichment.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: ENRICH POLYUNSATURATED FATTY ACID MIXTURE USEFUL PRODUCE COMPOSITION ENRICH SPECIFIC ISOMER

DERWENT-CLASS: D16 D23 E17

CPI-CODES: D05-A02C; D05-H13; D10-B02; D10-B04; E10-G02B2; E10-G02D;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
H7 H721 H722 H723 J0 J011 J012 J013 J014 J2
J271 J272 J273 L660 L699 M210 M211 M212 M213 M214
M215 M216 M220 M221 M222 M223 M224 M225 M226 M231
M232 M233 M262 M272 M281 M282 M311 M312 M313 M314
M315 M316 M320 M321 M331 M332 M333 M340 M342 M343
M344 M383 M391 M416 M720 M904 M905 N134 N241 N242
N262 N341 N342 N512 N513 Q233 Q271
Markush Compounds
200010-49101-K 200010-49101-P

Chemical Indexing M3 *02*
Fragmentation Code
H7 H722 H723 J0 J011 J012 J013 J014 J2 J271
J272 J273 L660 L699 M210 M211 M212 M213 M214 M215
M216 M220 M221 M222 M223 M224 M225 M226 M231 M232
M233 M262 M272 M281 M282 M311 M312 M313 M314 M315
M316 M320 M321 M331 M332 M333 M340 M342 M343 M344
M383 M391 M416 M720 M904 M905 N134 N241 N242 N262
N341 N342 N512 N513 Q233 Q271
Markush Compounds
200010-49102-K 200010-49102-P

Chemical Indexing M3 *03*
Fragmentation Code
H4 H401 H481 H8 M210 M212 M272 M281 M320 M416
M620 M730 M904 M905 M910
Specfic Compounds
00245K 00245S
Registry Numbers
0245S 0245U

Chemical Indexing M3 *04*
Fragmentation Code
H4 H403 H483 H8 M280 M313 M321 M332 M343 M383
M391 M416 M620 M730 M904 M905 M910
Specfic Compounds
00113K 00113S
Registry Numbers
0113S 0113U

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0113S; 0113U ; 0245S ; 0245U

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C2000-014650